

of a muscle. He adds that the myosin can be removed from muscles by means of a five-per-cent. solution of chloride of ammonium injected into the vessels, without altering the microscopical appearance. But after this procedure, neither general nor idio-muscular contractions are possible.

ACTION OF PRESSURE ON THE MOTOR AND THE SENSORY NERVES.—Luederitz, *Zeitschr. f. Klin. Med.*, Bd. iii (abstr. in *St. Petersb. med. Wochenschrift*, No. 42, 1880), has applied compression to the sciatic in rabbits by a ligature for varying periods of time, and found that, even after complete suppression of all conduction, the nerve returned to its normal functions on loosening the cord. This occurred four to six times in succession, by alternately tightening and loosening the ligature. He found, further, that with gradual increase of pressure the suppression of function occurred earlier in the motor nerves than in the sensory ones, so much so, indeed, that when the motor conduction was completely destroyed, that for sensation remained still intact. In some cases there was an apparent retardation of the sensory conduction at the point of compression.

These facts agree well with those of clinical observation. Vulpian remarks regarding spinal paralysis: "If there is conservation of sensibility with abolition of voluntary motility, we may say almost with certainty that we have to deal with compression." Baerwinkel and Duchenne remark in regard to peripheral paralysis, that the presence of sensibility, even if weakened, is a very favorable circumstance as regards prognosis.

THE VASO-DILATOR NERVES.—At the session of the Société de Biologie, July 17, 1880 (rep. in *Gaz. Des Hôpitaux*, No. 86), M. Laffont, continuing his investigations on the vaso-dilator fibres contained in the different peripheral branches of the trigeminal nerve, announced that, as he had shown to the society on the 17th of January, he had succeeded in dividing simultaneously within the cranium the facial and the accessory nerve of Wrisberg, the trigeminal between the gasserian ganglion and the pons Varolii, and one month later the excitation of the peripheral ends of the buccal, lingual and superior maxillary nerves of the same sides produced as strong a congestion of the mucous membrane on the side operated upon as on the other.

The *post-mortem* examination showed that the intracranial division of the trigeminus had been successful.

Thus it appears that the vaso-dilator nerves in the various peripheral divisions of the fifth nerve do not arise in the roots of this nerve, nor do they arise with the facial, as has been shown independently by MM. Laffont and Vulpian; they can therefore only come, as M. Laffont justly thought, from the glosso-pharyngeal, by way of Jacobson's nerve. The very elegant experiment of M. Vulpian, faradization of the tympanic caisson causing rubefaction of the buccal mucous membranes of the same side, supports this theory.

M. Laffont, wishing to test the origin of the glosso-pharyngeal, applied the excitation through the foramen lacerum posterior and obtained the same results.

In order to definitely test the matter, it is needful to perform the complete extirpation of the glosso-pharyngeal in such a way as to interrupt the communications between Jacobson's nerve and the other branches. Unfortunately, this is impracticable in adult animals, and M. Laffont employed very young puppies and kittens. Wishing also to study this point in a comparative physiological way, he studied the mechanism of the erection in the comb and wattles of the cock. He observed that excitation with a weak faradic current of the peripheral end of the ophthalmic nerve, which innervates the comb (by the intermediation of nerves analogous to the suborbital branches of mammals), caused rubefaction and turgescence of the comb on the side of the operation. Excitation, also, of the peripheral end of the inferior maxillary nerve, which innervates the jugular wattle (through fibres analogous to the mental branches of mammals), caused turgescence and erection of the corresponding wattle. The same nerve fibres, therefore, have the same functions in these two classes of animals, birds and mammals.

Is the origin of the dilator fibres the same? Do they arise in birds, as in dogs, from the glosso-pharyngeal? To ascertain whether this is the case, M. Laffont exposed the glosso-pharyngeal nerve in a cock, at its exit from the occipital, where it is easily isolated from the superior cervical ganglion with which it is intimately connected.

The excitation of this nerve caused immediate erection of the comb and the corresponding wattle.

This last experiment, according to M. Laffont, ought to explain the observation of Legros in 1866, that the extirpation of the

superior cervical ganglion in a young cock hindered the growth of these erectile appendages. This fact, that extirpation of a sympathetic ganglion arrested the nutrition of an organ, was in flagrant opposition with Cl. Bernard's discoveries in regard to the functions of the sympathetic. M. Legros, therefore, thought to explain it by attributing a different vitality to erectile from that of other tissues. But anatomical examination shows that, even in the adult, the small superior cervical ganglion is *very closely joined to the glosso-pharyngeal nerve*, and cannot be removed without damage to this nerve. It is, therefore, altogether improbable that in the young animal this ganglion can be removed without destroying the nerve also. Under these circumstances, Legros practically only performed on birds the same experiment as M. Laffont made on mammals; he destroyed the vaso-dilator nerves, and thus abolished the principal function of the erectile tissues.

It also happened that Nuchon, experimenting, at nearly the same time as Legros, on the adult animal, in whom the ganglion is more distinct and can with care be separated without too serious damage to the nerve, obtained results contradicting those of the latter observer.

THE VASO-DILATORS OF THE BUCCO-LABIAL REGION.—At the session of the Soc. de Biologie, October 24th (rep. in *Gaz. des Hôpitaux*, 1880, No. 126), M. Laffont recalled that he had reported to the society the fact that the vaso-dilator fibres contained in the trigeminus did not arise from the nucleus of origin of that nerve, but were merely acquired fibres, the origin of which is still unknown.

Nevertheless, in a note to the Acad. des Sciences, August 16th, MM. Dastre and Morat had accused MM. Jolyet and Laffont, of considering the fifth nerve as a typical vaso-dilator. In the same note, these physiologists claim to have discovered the origin of the vaso-dilators of the buccal region in the thoracic sympathetic. With this view, they are content to examine the effects produced by excitation of the cervical sympathetic; but, as Cl. Bernard has said, it does not suffice to merely irritate a nerve to attribute to it a certain function; it is needful, also, to divide it and see whether in these new conditions its function persists in its integrity. This has been done by M. Laffont; he extirpated the superior cervical ganglion in a dog and resected the cervical vago-sympathetic on the same side. Twenty days later, he ob-